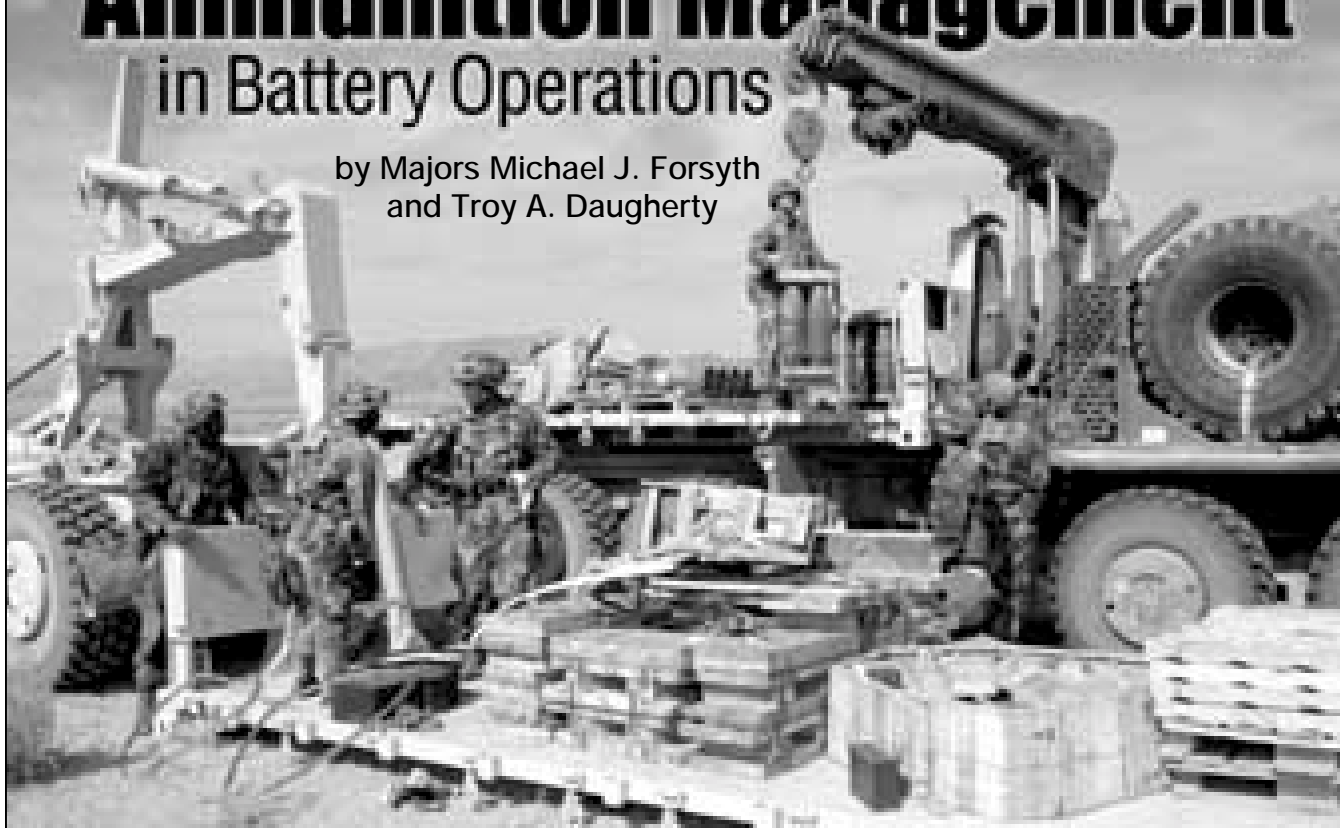


# Ammunition Management in Battery Operations

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**D**uring the past few years, the combat training centers (CTCs) have identified battery ammunition management as a continuing training shortfall. There are several reasons for this trend, ranging from battery leaders' not understanding their responsibilities, to unrealistic home-station training, to a wide variety of powder lots being issued as a part of a single unit basic load (UBL), which makes managing the lots difficult. Poor management of ammunition leads to slower fire mission response times, poor gunnery procedures and, in extreme cases, increased safety risks.

Although ammunition management is a challenge, it's a task any unit can tackle. This article offers ways for battery leaders to improve their ammunition management before deploying to a CTC or combat.

**The Challenge.** Battery leaders rarely have to deal with the sheer number of rounds that compose a UBL. During home-station training, units routinely draw enough ammunition for a field training exercise (FTX). These numbers usually are small and don't stress the battery's haul capacity or illustrate the importance of load planning for turrets or ready racks.

Additionally, during home-station training, units don't use a wide variety of munitions. Typically a battery will draw high-explosive (HE), white phosphorus (WP), hexachloroethane (HC) and illumination (Illum). Only on the rarest of occasions will a unit draw any type of improved conventional munitions (ICM) or copperhead (CPH); but at the CTCs, batteries receive the entire spectrum of artillery ammunition ("dummy" rounds, except during live fire). The complacency fostered at home station leads to headaches in juggling turret/ready rack load plans at the CTCs.

Compounding the problem is the challenge of powder lot management. At home station, units rarely have to sort through more than two or three lots of powder for a field exercise. As a result, batteries don't have to segregate lots and ensure the validity of the ammunition information as a part of the gunnery solution. At a training center, however, it is not unusual for a battery to have in excess of 10 different lots of powder.

Improper load configuration not only places inordinate strain on battery operations, it also can throw maneuver unit execution out of synchronization. For example, a 155-mm battery often receives

the task to emplace a family of scatterable mines (FASCAM) at the various training centers. Poor distribution of the area denial artillery munitions (ADAMs) can increase emplacement time. If the task for the battery is to fire 16 ADAMs but the unit has all the rounds consolidated on one gun, it will take an additional 13 minutes to deliver the minefield at the sustained rate-of-fire. If emplacement timing is critical to the synchronization of the maneuver plan, a slower delivery of the rounds can lead to a minefield emplaced too late to achieve its purpose.

This actually happened recently at a training center, exposing the battery to a heightened counterfire threat and desynchronizing the entire maneuver brigade. Battery commanders can prevent this from happening in their units, and it starts with leaders' understanding their responsibilities.

**Pinning the Rose On.** Several battery leaders have ammunition management responsibilities.

The *battery commander* has overall responsibility for battery ammunition management. (See Figure 1 for troop-leading procedures as a framework for ammunition management.) He focuses

the unit on future operations and provides guidance for ammunition load planning. After receiving a mission, he issues a warning order (WARNO) to his unit, which allows the executive officer (XO)/platoon leader to begin uploading, downloading or trans-loading ammunition on the battery vehicles. Configuring loads early in the planning process means the unit gets a head start on preparation and has less wasted time. This also enables the battery to quickly adjust the loads as the mission is “fleshed out.”

The battery commander issues an ammunition tracking matrix. The matrix tracks the location of the ammunition—turret/gun or prime mover and FA ammunition supply vehicle (FAASV) or palletized loading system (PLS) truck—and the amount of ammunition by type, such as dual-purpose ICM (DPICM), HE, rocket-assisted projectiles (RAP), illumination and other munitions, plus propellants. The XO/platoon leader, fire direction officer (FDO), chief of firing battery (CFB) and gunnery sergeant (GSG) use the matrix to track the distribution of ammunition throughout the battery’s vehicles. The matrix includes resupply triggers by rounds and vehicles: after eight rounds of DPICM, resupply the howitzer; after 30 rounds of DPICM, resupply the FAASV from the PLS; and after nine M119 powders, resupply with White Bag.

The XO/platoon leader takes the battery commander’s guidance and executes the load configuration under his direct supervision. He disseminates that guidance to the CFB/platoon sergeant (PSG) and section chiefs, so they can begin shifting ammunition. The XO/platoon leader then ensures the loads are correctly configured and correctly distributed across the vehicles. He also must thoroughly understand the tactical situation and fire plan to make valid decisions concerning ammunition management.

The FDO is the “honest broker” in ammunition management. In many instances at home station, FDOs hold direct supervisory responsibility for ammunition distribution and tracking, but this should not be the case. It is the XO’s responsibility to supervise ammunition management.

The FDO provides an independent secondary check by keeping the XO informed of the ammunition required to support the fire plan and gunnery validity and suggests changes to the load configuration. He then tracks the ammunition count as a double check for

the XO and informs the XO of any discrepancies requiring correction.

The CFB/PSG is the “butt-kicker” on the line of metal and is assisted by the GSG. Using the battery commander’s guidance disseminated through the XO, he implements the load plan. He ensures the section chiefs understand the proposed configuration and starts the loading process. He identifies for the XO and battery commander potential problems with the plan and suggests alternatives that will solve the problems and help accomplish the mission.

After loading is completed, the CFB and XO conduct inspections to check for correctness. (See *FM 6-50 Tactics*,

*Techniques and Procedures for the Field Artillery Cannon Battery*, 1996, Pages 1-4 and 1-5. All the responsibilities for battery personnel are derived from the duty descriptions in this manual.)

**How to Configure Loads.** Based on the tactical mission (offense or defense), the essential Field Artillery tasks (EFATs) and the scheme of fires from the FA support plan (FASP), the battery commander identifies the required munitions for the operation. For example in a deliberate defense, a battery could receive the task (through an EFAT) to emplace a FASCAM minefield. This requirement forces the battery commander to decide how to configure his

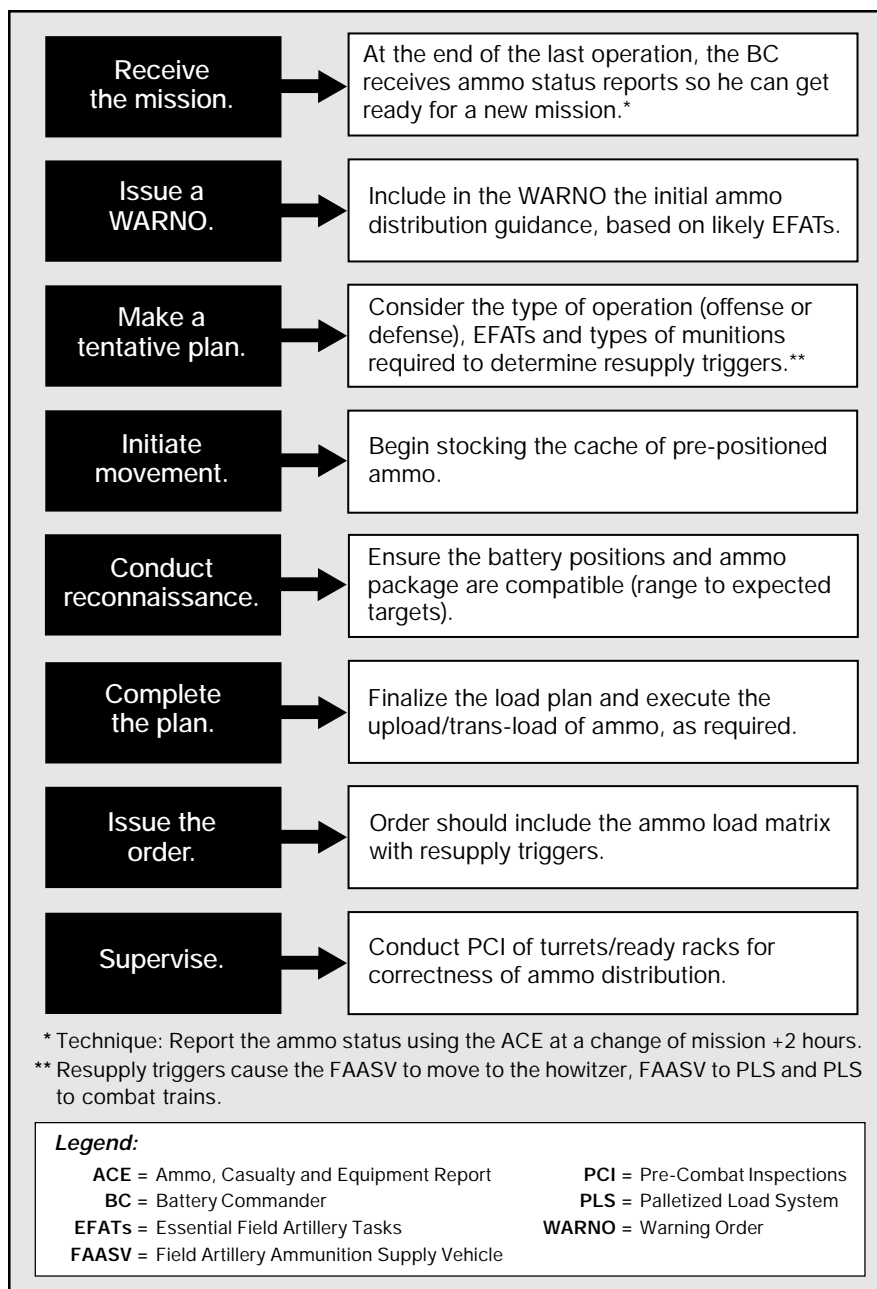


Figure 1: Troop-Leading Procedures as a Framework for Ammunition Management

1. **What ammunition do I need now?** This means the ammunition stored in the gun turret for a heavy unit or in the ready rack for light units.
2. **What ammunition do I need readily available?** This means the ammunition stored in the FA ammunition supply vehicle (FAASV) for heavy units or in the section ammunition truck for light units.
3. **What ammunition do I need for immediate resupply?** This is the ammunition stored on the palletized loading system (PLS) truck for heavy units or the 5-ton ammunition trucks for light units.
4. **What are the unit resupply triggers?** Triggers cause ammunition to be brought by complete round from the FAASV to PLS and FAASV to the howitzer. A trigger also causes the PLS to return to the combat trains for resupply.

Figure 2: Questions the Battery Commander Asks to Develop an Ammunition Plan

ammunition. He answers the questions in Figure 2 to develop a plan. Once he develops the load plan, he allocates the ammunition across the gun line and support vehicles.

Next, the commander (with the XO and FDO) identifies powder lots to ensure the validity of the gunnery solution. The battery uses the most plentiful powder lot as its base lot for accuracy and as the fire-for-effect (FFE) fire mission powder lot. Inevitably, the battery will receive several other powder lots in small numbers. The commander ensures these lots are used for adjust fire missions and non-precision munitions, such as smoke or illumination.

In its standing operating procedures (SOP), the battery must have a powder lot marking system for powder canisters. This prevents the battery from using the wrong powder canisters in a FFE mission requiring precise fires. A simple system is to use chalk to mark a lot number (given by the FDO) on the canister and then segregate the powders by the lot chalked on the containers.

Some missions require pre-positioning of ammunition to support the operation. The battery commander identifies those locations and the munitions required, if not specified in the FASP. He decides what munitions to pre-position, based on the mission, EFAT and phase of the battle.

Reconnaissance, either map or ground, verifies much of the ammunition planning guidance. Positioning has a great effect on load configuration. While conducting recon, the commander checks to ensure the battery loads are compatible with the expected range-to-target for fires and there are no site-to-crest problems. Also, some positions will not support pre-positioning or ammunition vehicular traffic, which could require modification to the movement plan or

load configurations.

The battery commander then finalizes the tactical plan and briefs the ammunition distribution load plan to his subordinates as a part of the battery operations order (OPORD). The plan should not only cover the gun and vehicle breakdown, but also specify the resupply triggers by ammunition type.

Since the battery already has configured its loads based on the guidance in the commander's WARNO, the battery should only have to adjust and refine the load plans. The XO and CFB compare the ammunition matrix from the OPORD to the actual count on the gun line. The XO identifies the changes and then gives the adjustments to the section chiefs for final configuration.

After all section chiefs report their uploads are complete, the XO, CFB and GSG conduct final inspections to verify ammunition distribution and count. The FDO double-checks the count, by having the section chiefs report section counts to the FDC. The XO and FDO identify any discrepancies, and then the XO and CFB reconcile the differences. As a final check, the battery commander conducts spot inspections to validate distribution. The battery then can get on with the business of delivering fires.

**Execution.** While executing the operation, the battery leadership must maintain situational awareness to ensure the unit is resupplied at the appropriate time. Digital communications make it difficult to monitor ammunition expenditure, especially in Paladin units, and battery leaders can lose touch with the situation. To alleviate this possibility, the leaders work out a system to monitor control of ammunition usage.

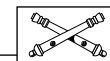
One technique battery leaders use is to have the FDO always announce "fire mission" over the battery internal voice net. Using a standard fire order, the BC,

XO and CFB can track the expenditure of ammunition to anticipate when the unit will require resupply. If the fire mission deviates from the standard ammunition and fire order, the FDO simply announces the changes.

Any unit can meet the challenge of ammunition management. The key is to develop a systematic approach to handling ammunition and commit it to black and white in the battery SOP.

It is too late to start considering ammunition management when the UBL is issued at a CTC or in combat. Training and preparation for ammunition management begins at home station.

The effort expended to develop and validate an SOP will pay great dividends when a battery receives the call to deploy. Sound ammunition management helps ensure timely and accurate fires, the standard for all Field Artillerymen.



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